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U1S S1027

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(58) Field of search

UK CL (Edition J) B4W
INT CL^{*} A61B, B25B

(54) Improvements in forceps

(57) Forceps which include broad cooperating jaws 12 having non traumatic teeth 14 for gripping muscle are modified in accordance with the invention by including cooperating triangular recesses 18 on each of the jaws 12 so that the forceps can also be used to grip round bodied needles 20.

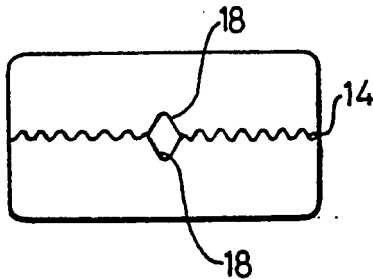


Fig. 7

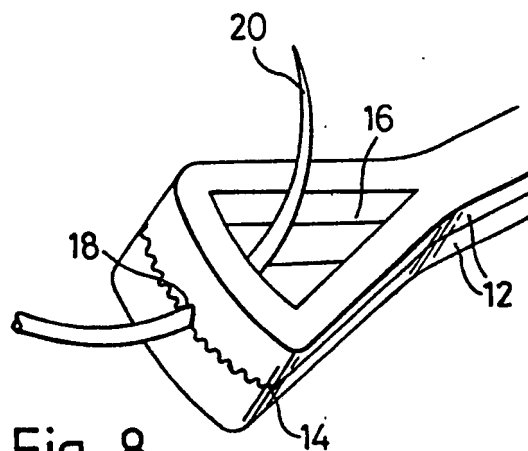


Fig. 8

At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

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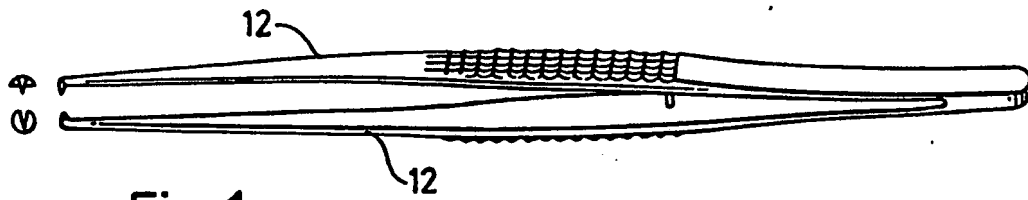


Fig. 1



Fig. 1a

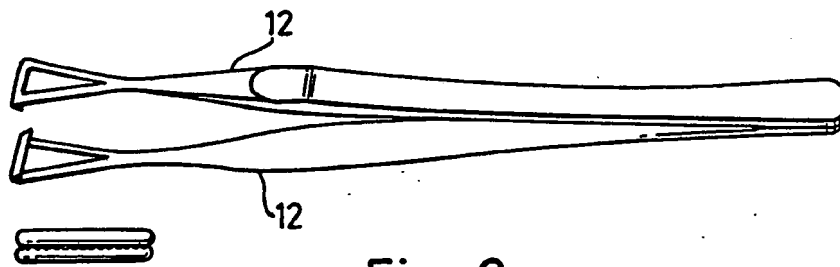


Fig. 2

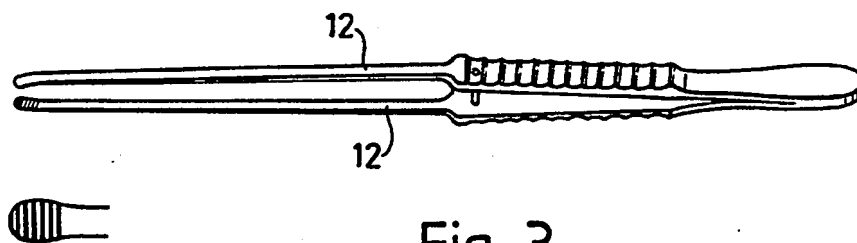


Fig. 3

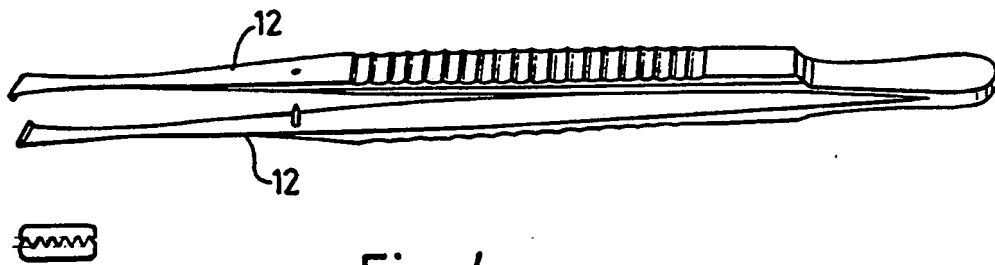


Fig. 4

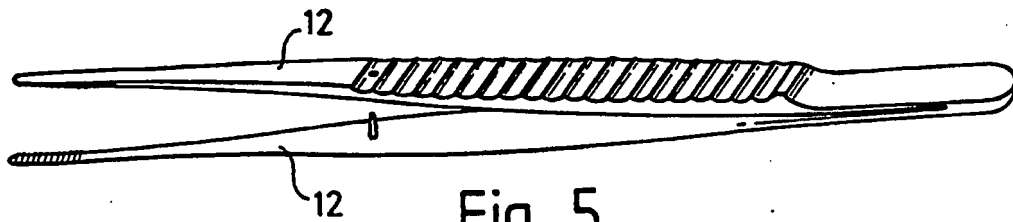


Fig. 5

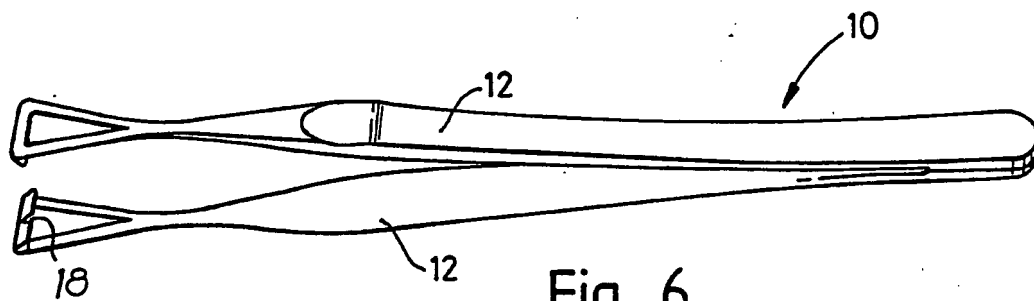


Fig. 6

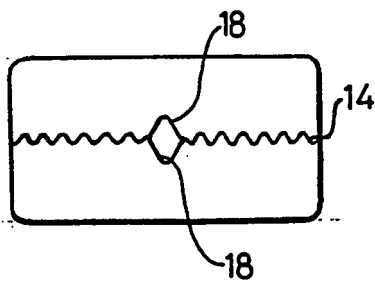


Fig. 7

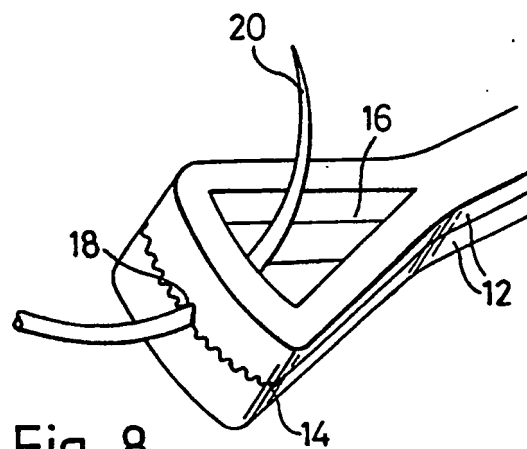


Fig. 8

IMPROVEMENTS IN FORCEPS

Description

This invention relates to forceps, especially but not exclusively to dissecting forceps adapted for gripping uterine muscle.

Typical surgical forceps are shown in Fig. 1 to 5 of the accompanying drawings. Forceps are used for gripping, but are designed for different purposes. For example the Bickford forceps shown in Fig. 1 have long tapering jaws with traumatic interlocking teeth which if used to grip muscle would damage it. However such forceps are suitable for gripping a needle. The Duval forceps, (Fig. 2), on the other hand, have broad triangular jaws and non traumatic teeth for gripping, but not damaging muscle. However, because the teeth are so small the Duval forcep is not suitable for gripping a needle.

Morrison Davies forceps (Fig. 3) and sympathectomy forceps (Fig. 5) have narrow jaws and are suited for gripping tissues other than muscle while the Nelson forceps (Fig. 4) can grip muscle but not a needle. The Bickford forceps shown in Fig. 1a are suited for gripping thin tissue such as the peritoneum, but are not ideally suited for also gripping needles. Thus, no forceps therefore presently exist which are especially adapted for the dual purpose of both gripping needles and uterine muscle.

During surgical operations it is often the case that the surgeon will adhere to bad practice rather than submit to the inconvenience of using two different types of forceps. For example during a caesarean section operation, the first part of a gaping uterine muscle will firstly be gripped by say Duval forceps, a round bodied needle inserted, then the second part of the uterine muscle gripped and pulled over to stitch the first part. For convenience the obstetrician will often grip the needle emerging from the second part of the muscle with his fingers to pull the stitch through. However this is bad practice, not least in that the obstetrician risks a needle prick and the possible contraction of a dangerous disease such as AIDS.

Accordingly it is an object of the present invention to provide forceps which can both grip body tissue and needles effectively.

Another object of this invention is to provide dissecting forceps which will more easily grip a needle.

5 According to one aspect of the present invention there is provided forceps having a pair of jaws including non traumatic teeth for gripping body tissues, at least one of the jaws having a recess for gripping a needle when the jaws are closed.

10 Preferably the recess is V-shaped and preferably also, each jaw has a recess therein for gripping the needle.

Preferably also, the jaws of the forceps are broad and adapted for gripping muscle, at least one having an aperture behind the recess for passage of the gripped needle.

15 Preferably also, Duval dissecting forceps are modified by providing a V-shaped recess on the toothed portion of opposite jaws so that a needle can be gripped when the jaws are closed.

20 According to another aspect of the present invention there is provided surgical forceps having a pair of jaws adapted to open and close at one end, wherein at least one jaw, at or adjacent to said end has a recess to receive a needle so that the needle can be securely gripped when the jaws are closed.

The invention will now be described, by way of example only, with reference to the accompanying drawings, in which:-

25 Fig. 1 is a perspective view of existing Bickford dissecting forceps having traumatic interlocking teeth;

Fig. 1a is a perspective view of existing Bickford dissecting forceps having non traumatic teeth;

Fig. 2 is a perspective view of existing Duval dissecting forceps;

30 Fig. 3 is a perspective view of existing Morrision Davies dissecting forceps;

Fig. 4 is a perspective view of existing Nelson dissecting forceps;

35 Fig. 5 is a perspective view of existing sympathectomy dissecting forceps;

Fig. 6 is a perspective view of Duval dissecting forceps as in Fig. 2 but modified in accordance with the invention.

Fig. 7 is a front view of the modified Duval forceps as shown in Fig. 6 but with the jaws closed; and

5 Fig. 8 is a perspective view of the modified Duval forceps as shown in Fig. 6, but with the jaws closed around a round bodied needle.

10 In Figs. 6 to 8, Duval dissecting forceps 10 are shown modified in accordance with the invention. The forceps 10 comprises jaws 12 having non traumatic teeth 14 (Figs. 7 and 8) at the end thereof for gripping muscle and the like. In each of the jaws, triangular apertures 16 are provided, which form a continuous passage through the jaws when in the closed position (Fig. 7 and 8). In accordance with the invention a recess 18 which is preferably
15 V-shaped is cut out of the toothed portion of each of the jaws 12 so that when they are closed, a needle can be firmly gripped in the combined recess as shown in Fig. 8.

20 During a caesarean section operation, previously cut uterine muscle is usually first lifted and pulled taut before obstetrician stitches it. Although unmodified Duval dissecting forceps of the type shown in Fig. 2 could satisfactorily be used for lifting the uterine muscle, they could not conveniently be used for gripping a needle 20, which could slip or twist. The modified Duval forceps 10 are shown in Figs. 6 to 8 of the drawings is
25 however dual purpose. Firstly the non traumatic teeth and broad jaws allow muscle and other organs to be gripped as before. Furthermore the recesses 18 in the jaws 12 allow the needle to be firmly gripped as it emerges from the uterine muscle, and because the needle can project through the aperture in one (the upper)
30 jaw, the needle can be successfully gripped and pulled fully through the muscle.

35 In use the surgeon holds the modified Duval forceps in one hand and the needle (which is in a needle holder) in the other. The muscle is gripped by the jaws of the forceps and the needle is pushed through the muscle towards and close to the forceps.

When a sufficient length of needle has emerged, the surgeon releases the muscle, grips the needle in the jaws of the forceps (Fig. 8) and pulls the needle completely through the muscle, (simultaneously releasing the needle from the needle holder).

- 5 It will be appreciated that there need be only one recess 18 in one of the jaws 12 and it could be of various shapes, as long as the needle is firmly gripped when the jaws are closed.

10 Furthermore forceps generally and other gripping surgical instruments could be modified or be designed with a needle gripping recess 18. However such an instrument may be adapted so that the jaws do not obstruct the needle. This may be done, for example, be altering the angle of the recess in the jaw(s) and /or having narrower jaws. The Bickford forceps as shown in Fig. 1a could therefore probably be improved by an adapted needle gripping recess.

Claims

1. Forceps having a pair of jaws including non traumatic teeth for gripping body tissues, at least one of the jaws having a recess for gripping a needle when the jaws are closed.
- 2.. Forceps as claimed in claim 1 wherein the recess is
5 V-shaped.
3. Forceps as claimed in claims 1 or 2 wherein each jaw has a recess therein for gripping the needle.
4. Forceps as claimed in any one of the preceeding claims wherein the jaws of the forceps are broad and adapted for gripping
10 muscle, at least one jaw having an aperture behind the recess for passage of the gripped needle.
5. Forceps as claimed in any one of the preceeding claims, which are surgical forceps.
6. Forceps as claimed in any one of the preceeding claims
15 wherein Duval dissecting forceps are modified by providing a V-shaped recess on the toothed portion of opposite jaws so that a needle can be gripped when the jaws are closed.
7. Forceps having a pair of jaws adapted to open and close at one end, wherein at least one jaw, at or adjacent to said end
20 has a recess to receive a needle so that the needle can be securely gripped when the jaws are closed.
8. Forceps substantially as described with reference to Figs. 6 to 8 of the accompanying drawings.